

INSECTA

ORDER COLLEMBOLA

By J. W. FOLSOM¹

The single peculiar specimen at hand represents a new family of Collembola.

The most remarkable characteristic of the Collembolan is the primitive condition of the furcula, or spring, on the fourth abdominal segment. The furcula (figure 1) consists simply of a pair of long slender diverging stylets, each swollen basally. No division into manubrium, dentes, and mucrones (as in recent forms) was detected.

In ventral aspect, under strong overhead illumination, the form of the furcula showed clearly in white, against the dark background of the abdomen.

On the whole, the affinities of this species are with Entomobryomorpha, particularly Entomobryidæ, as shown in the reduced, concealed pronotum, the reduced first abdominal segment, and the clothing. On the other hand, the third abdominal segment is not reduced, being almost as long as the fourth (as 14:17), and in this respect suggests the genus *Orchesella*. Furthermore, the fifth abdominal segment is not reduced. The anterior limits of the sixth abdominal segment are obscure, though there is a dorsal subtriangular appendage, or suranal valve, and underneath this a subtriangular subanal valve. These two valves are separated from each other in the specimen by a bubble that projects from the rectum.

The antennæ, however, which are relatively short, with short stout segments, are not of the entomobryid type, but are such as are characteristic of Poduromorpha (Poduridæ and other families).

A new family is necessary for the reception of this species. That is something unusual, for the twelve species of Col-

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lembola hitherto known from amber have all been referable to recent genera (*Hypogastrura* 2, *Isotoma* 2, *Entomobrya* 1, *Tomocerus* 1, *Lepidocyrtus* 1, *Orchesella* 1, *Sminthurus* 1, *Allacma* 3), according to Handschin,² who has revised them.

Those twelve species, from Baltic amber, are from the Oligocene, however; while the species described here is apparently Cretaceous.

Our specimen is essentially as represented in figure 1. The parallel-sided condition of the abdomen is abnormal; on the ventral side are irregular folds which indicate that the abdomen has shrunk laterally. Probably the abdomen was normally fusiform.

The number of eyes on each side of the head could not be made out clearly. None could be seen on the right side, but there were apparently at least six on the left side. Since the area of the eye spot is not reduced (as compared with that of recent forms), and since the area is greater than is necessary for six eyes, it is possible that there were eight eyes on each side, as in most of the recent species.

The legs were contracted in confusion under the body, and the claws could not be studied. A ventral tube could be seen obscurely. A tenaculum was not seen.

PROTENTOMOBRYIDÆ Folsom, n. fam.

Body elongate. Pronotum probably membranous and naked, concealed under the mesonotum. Abd. 1 reduced. Abd. 3 almost as long as abd. 4, which is but slightly enlarged. Abd. 5 not reduced. Abd. 6 with suranal and subanal valves. Furcula present, consisting of a pair of long simple stylets. Antennal segments four, short and stout. Integument smooth. Clothing setaceous.

PROTENTOMOBRYA Folsom, n. gen.

The generic characters are contained in the preceding diagnosis of the family. They cannot, however, be listed

²Handschin, E. 1926. Revision der Collembolen des baltischen Bernsteins. Ent. Mitt., bd. 15: 161-185, 211-223, 330-342, figs.

separately, with only one species at hand. It may be said, though, that in the family Entomobryidæ the number of antennal segments, the relative lengths of abd. 3 and abd. 4, and the character of the clothing (whether setaceous or scaly) are characters of generic value.

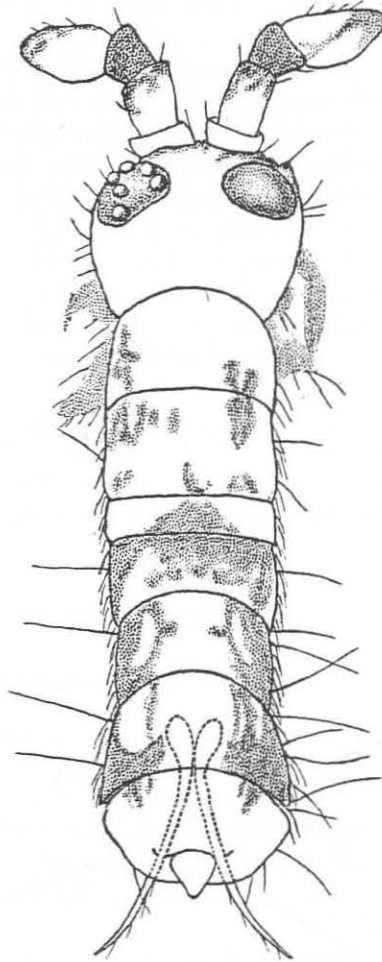


FIGURE 1.—*Protentombrya walkeri* Folsom, n. sp. Drawing of type.

Protentomobrya walkeri Folsom, n. sp.

Figure 1

Ground colour probably pale yellow or white, with blackish markings. Ant. 2 black apically; ant. 2 black throughout. The colour pattern of the body is partly indefinite, but abd. 1 shows a black median triangle; abd. 2 is mostly black except along the posterior border; abd. 3 is black laterally, with an elongate pale spot on each side; and abd. 4 has a black band across the posterior third (interrupted in the figure). Eye spots not reduced, and eyes at least 6 and possibly 8 on each side. Antennæ relatively short, with short stout segments, in relative lengths as 3:12:7:17 (right side) and 2.5:11:8:15 (left side). Clothing of dense, short, reclinate setæ and long, outstanding tactile hairs. Furcula with sparse, short, stiff setæ. Integument smooth. Length, 0.64 mm.

Holotype: No. 64, Royal Ontario Museum of Mineralogy, Toronto.

Locality: Cedar Lake, Manitoba, Canada.

Named for Dr. T. L. Walker, Director of the Royal Ontario Museum of Mineralogy, Toronto, to whom we are indebted for the opportunity to study these amber insects.